

We claim:

1. A selective vibrating device for transmitting vibrations to a user situated on a support medium without disturbing any other person on the same support medium, said
5 vibrating device comprising (i) a vibrating member comprising a vibration mechanism and at least two regions of material, a vibration transmission region and a vibration dampening region, said vibration transmission region substantially located between the vibration mechanism and the surface of the vibrating member nearest the user's body and said vibration dampening region substantially located between the vibration mechanism and the
10 surface of the vibrating member nearest the support medium; (ii) a power source to operate the vibration mechanism; and (iii) a switch for turning the vibration mechanism on and off.

2. The device according to claim 1 further comprising a timer for monitoring the vibrating time period after activation of the vibration mechanism and prior to termination of the vibration by the user.

15 3. The device according to claim 1 wherein the vibration transmission region of the vibrating member contains a material selected from the group consisting of soft, flexible synthetic rubber, visco-elastic gels and cross-linked polyurethane gels.

4. The device according to claim 1 wherein the vibration dampening region comprises a volume of material providing a continuous lower surface for the vibrating
20 member.

5. The device according to claim 1 wherein the vibration dampening region comprises a plurality of discontinuous islands of material, each island associated with the location of a vibration mechanism in the vibrating member.

6. The device according to claim 1 wherein the vibration damping region of the

vibrating member contains an open-celled, flexible polymeric foam.

7. The device of claim 4 where in the damping region of the vibrating member comprises an open-celled, flexible polymeric foam having a density in the range of about 1.3 to about 1.8 pounds per cubic foot.

5 8. The device according to claim 1 wherein the vibrating member comprises a covering of a vinyl or rubber material.

9. The device according to claim 1 wherein the vibrating device is capable of providing a varying degree of intensity and pattern of vibrations to the user which are controlled by the user.

10 10. A selective massaging device for providing a vibratory massage to a user on a support medium without disturbing any other person situated on the support medium, said massaging device comprising the selective vibrating device of claim 1, wherein the vibrating mechanism is capable of creating a range of vibration patterns differing in amplitude and/or frequency, and wherein a controller is present for the user to control the
15 nature of the vibration transmitted.

11. The selective massaging device according to claim 10 further comprising a timer for monitoring the vibrating time period after activation of the vibration mechanism and prior to termination of the massage by the user.

12. A selective alarm device for awakening or alerting the user situated on a
20 support medium, of the existence of a predetermined condition without disturbing any other person in the vicinity of the user, including another person situated on the support medium, said device comprising:

(i) a vibrating member comprising a vibration mechanism and at least two regions of material, a vibration transmission region and a vibration dampening region, said

vibration transmission region substantially located between the vibration mechanism and the surface of the vibrating member nearest the user's body and said vibration dampening region substantially located between the vibration mechanism and the surface of the vibrating member nearest the support medium;

5 (ii) a sensor/controller comprising one or more elements which function as a sensor and controller, being capable of detecting the presence of a predetermined condition, and upon detection of the condition causing the activation of the vibration mechanism incorporated within the vibrating member; and

 (iii) one or more power sources for operating the constituents of the device
10 including the sensor/controller and the vibration mechanism;

 said vibration mechanism when activated being capable of creating vibrations sufficient to alert or awaken the user; said vibration transmission region having a density greater than that of the vibration dampening region; said vibrating member being sufficiently flexible so as not to be uncomfortable to the user when situated between the
15 user and the support medium and being of a sufficient size and dimension to enable the vibration mechanism therein to transmit vibration in sufficient intensity to awaken or alert the user while dampening transmission of vibration to the support medium to prevent the disturbance of another person on the support medium.

20 13. The device according to claim 12 wherein the predetermined condition is selected from a preselected time, a sound originating from a location remote from the user, a signal from a safety or security device, an incoming telephone call, motion detected by a motion detection device, a bedwetting incident.

 14. The device according to claim 13 wherein the safety or security device is

selected from a smoke alarm, carbon monoxide detector, water or flood detector, burglar alarm, heart monitor, breathing monitor, infant monitor.

15. The device according to claim 13 wherein the existence of the predetermined condition is detected by a device separate from the selective alarm device
5 which transmits a signal to the sensor/controller of the selective alarm device.

16. The device according to claim 13 wherein the signal to the sensor/controller is sent by wireless transmission.

17. The device according to claim 12 or 15 wherein the controller is attached to the vibrating mechanism by a hardwire connection.

10 18. The device according to claim 12 wherein the vibrating mechanism is selected from a motor that rotates an eccentric weight in an electromagnetic field and a piezoceramic material which vibrates when an alternating voltage is applied.

19. The device according to claims 12 and 18 wherein the vibrating mechanism is capable of creating a range of vibration patterns differing in amplitude and/or frequency.

15 20. The device according to claim 12 wherein during the time period after activation by the controller the vibrating mechanism increases its amplitude and/or frequency of vibration to create a vibration pattern that is more stimulating in arousing the user.

21. The device according to claim 12 comprising a switch for the user to turn off
20 the operation of the vibrating mechanism after activation.

22. The device according to claim 13 further comprising a timer for monitoring the vibrating time period after activation of the vibration mechanism and prior to termination of the vibration by the user.

23. The device according to claim 12 wherein the controller and vibration

device are capable of providing a varying degree of intensity of vibrations to the user and which can be preprogrammed to provide a gradual increasing of intensity of vibrations until the vibration mechanism is turned off.

24. The device according to claim 13 further comprising a supplemental alarm
5 for transmitting notice to the user by one or more of audible, visible and olfactory media.

25. The device according to claim 24 wherein the supplemental alarm transmit notice to the user after the vibrating time period exceeds a predetermined time limit.

26. The device according to claim 12 further comprising a snooze alarm feature wherein after the user activates a snooze switch during the vibrating time period, the
10 vibration terminates for a preselected time period after which the vibrating mechanism is activated.

27. The device according to claim 12 wherein the device further comprises a weight detecting element which shuts off the vibrating mechanism if the user is not detected as situated above the vibrating member.

15 28. The device according to claim 12 wherein the vibrating member is in the shape of a relatively flat pad ergonomically contoured for use under and adjacent the torso of a user.

29. The device according to claim 12 wherein the vibration transmission region of the vibrating member contains a material selected from the group consisting of soft,
20 flexible synthetic rubber, visco-elastic gels and cross-linked polyurethane gels.

30. The device according to claim 12 wherein the vibration dampening region comprises a volume of material providing a continuous lower surface for the vibrating member.

31. The device according to claim 12 wherein the vibration dampening region

comprises a plurality of discontinuous islands of material, each island associated with the location of a vibration mechanism in the vibrating member

32. The device according to claim 12 wherein the vibration damping region of the vibrating member contains an open-celled, flexible polymeric foam.

5 33. The device of claim 11 wherein the damping region of the vibrating member comprises an open-celled, flexible polymeric foam having a density in the range of about 1.3 to about 1.8 pounds per cubic foot.

34. The device according to claim 12 wherein the vibrating member comprises a covering of a water-resistant or water-repellant material

10 35. The device according to claim 12 wherein the vibration mechanism and other component parts are removable from the vibrating member.

36. The device according to claim 12 wherein the device contains at least two vibrating members and wherein they are not all controlled through a single control.

37. The device according to claim 12 which is sized and configured to
15 independently alert or alarm two or more users situated on the same bed or support medium, comprising at least one vibrating member for each user, each vibrating member comprising one or more vibration mechanisms and associated regions of materials of varying density, each vibration mechanism configured to be located in the vicinity of the individual users on the bed or other support medium, each vibrating mechanism capable of
20 vibrating at different amplitudes and frequencies.

38. The device according to claim 12 which is programmed to be an alarm clock for awakening a sleeping user on a bed at a pre-selected time without disturbing another person sleeping on the same bed, said device including a time keeping element and an alarm capable of accurately tracking and displaying time and capable of transmitting a

signal to the vibrating mechanism when a preselected time coincides with the actual time on the time-keeping element.

39. The device according to claim 11 wherein the surface facing away from the vibration mechanism contains a feature to maintain the vibrating member in a relatively fixed position with respect to the bed or support medium.

40. The device according to claim 11 wherein the device includes a backup alarm which is capable of being triggered when the user fails to turn off the alarm after a predetermined period of time after the vibration mechanism has been activated, said backup alarm being audible.

41. An apparatus for the targeted communication of a vibration alert to a user comprising:

a vibrating unit;

a high transmission material substantially encasing the vibrating unit;

a low transmission material in contact with a portion, but not all, of the high transmission material's surface such that it provides a dampened signal path; and

wherein vibration of the vibrating unit transmits the alert through exposed surface of the high transmission material.

42. The apparatus according the claim 41 wherein the portion of the high transmission material's surface not contacted by the low transmission material is sized to ensure that the vibration signal does not extend beyond the width of a user.

43. The apparatus according to claim 41 further wherein vibration is initiated in response to a trigger.

44. The apparatus according to claim 43 wherein the trigger is the elapsing of a predetermined time.

45. The apparatus according to claim 43 further comprising a sensor and wherein the trigger is the receipt of a remote signal by the sensor.

5 46. The apparatus according to claim 45 wherein the remote signal is selected from a signal from a sound sensor, a signal from a safety or security device, an incoming telephone call, a signal from a motion detection device, a signal from a moisture sensor.

47. The apparatus according to claim 41 wherein the low transmission material covers the bottom surface of the high transmission material.

10 48. The apparatus according to claim 41 wherein the low transmission material covers a portion of the bottom surface of the high transmission material.

49. A method for providing a targeted alert to a user comprising:
placing the user in contact with a high transmission material's exposed surface, wherein the high transmission material substantially encloses a vibrating device
15 and the high transmission material's unexposed surface is substantially covered with a low transmission material;

setting an alert criteria;

awaiting arrival of the alert criteria; and

activating the vibrating device in response to the arrival of the alert criteria.

20 50. The method according to claim 49 wherein the step of placing the user in contact with a high transmission material's exposed surface comprises lying the user on top of the high transmission material.

51. The method according to claim 49 wherein the step of setting an alert criteria comprises choosing a time.

52. The method according to claim 49 wherein the alert criteria comprises a remote signal selected from a signal from a sound sensor, a signal from a safety or security device, an incoming telephone call, a signal from a motion detection device and a signal from a moisture sensor.

5 53. The method according to claim 49 wherein the high transmission material's exposed surface is sized to avoid transmission of the signal to persons other than the user.